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10/786,480

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EXAMINER

NGUYEN, KEVIN M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/786,480	Applicant(s) UEHARA ET AL.	
	Examiner KEVIN NGUYEN	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2007 and 06 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

The amendment filed on 9/6/2007 is entered. Claims 1-16 are original, and claims 17-20 are newly added. Thus, claims 1-20 are pending.

In view of the pre-appeal brief filed on 2/6/2008, the final rejection mailed on 11/6/2007 is withdrawn. Upon further consideration, applicant's arguments, filed on 9/6/2007, with respect to the rejection(s) of claim(s) 1-20 under Woodgate have been fully considered and are not persuasive. The rejection of claims 1-16 is clarified in the response to arguments as following below. A new ground(s) of rejection is made with respect to the amendment to claims 17-20 as following below.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Woodgate et al (US 7,058,252 hereafter Woodgate).

3. **As to claim 1**, figures 44 and 46 of Woodgate teaches an image display device comprising:

a light source (60);

a display panel (a pixel plane 468, fig. 43) disposed in front of said light source and having a plurality of pixel sections (460, 456) in the form of a matrix (fig. 44), each of said pixel sections including a first pixel for displaying an image for the first viewpoint (434, fig. 42) and a second pixel (440) for displaying an image for the second viewpoint, said second pixel being disposed at a position apart from said first pixel in a first direction; and

an optical unit (lens 138, fig. 46) disposed in front of said display panel for deflecting light emitted from said first and second pixels in the first direction (332),

wherein each of said first and second pixels (one pixel in fig. 44) includes a transmissive region (456) for transmitting the light emitted from said light source to said optical unit and a reflective region (460) for reflecting the exterior light incident from the front to said optical unit, and wherein said transmissive region and said reflective region are arranged in a second direction (333) perpendicular to the first direction in each pixel (a horizontal gap 333 is perpendicular to a vertical gap 332), as discussed in col. 52, lines 20-53.

As to claim 2, Woodgate teaches an image display device according to claim 1, wherein said optical unit is a lenticular lens (the lenticular screen, col. 49, line 49) in which a plurality of cylindrical lenses is arranged in the first direction (332), said cylindrical lenses being disposed in each line in which said pixel sections extend in the second direction (333) corresponding to the

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longitudinal direction of said cylindrical lens (the lenticular screen, col. 5, lines 19-31, and col. 49, line 49).

As to claim 3, Woodgate teaches an image display device according to claim 1, wherein said optical unit is a parallax barrier (the parallax barrier, col. 3, line 30—col. 4, line 8, and col. 49, line 50) in which a plurality of slits is arranged in the first direction, said slits being formed for each line in which said pixel sections extend in the second direction corresponding to the longitudinal direction of said slit (the slit of the parallax barrier, col. 4, lines 1-8, and col. 49, lines 39-50).

4. **As to claim 4**, Woodgate teaches an image display device comprising:

a light source (60, fig. 46);

a display panel (a pixel plane 468, fig. 43) disposed in front of said light source and having a plurality of pixel sections (456, 460) in the form of a matrix (fig. 44), each of said pixel sections including at least a first pixel for displaying an image for the first viewpoint (434 for a first viewer) and a second pixel for displaying an image for the second viewpoint (440 for a second viewer), said second pixel being disposed at a position apart from said first pixel in a first direction (332); and

a parallax barrier (the parallax barrier, col. 49, lines 39-50) interposed between said light source and said display panel, said parallax barrier being formed by arranging a plurality of slits for deflecting the light emitted from said light source in the first direction (332), in which case, said slits are disposed in each line of said pixel sections (456, 460) extending in a second direction (333) perpendicular to the first direction, said second direction (333) being the longitudinal direction of said slits (the slits of the parallax barrier, col. 4, lines 1-8),

wherein each of said first and second pixels (456, 460) includes a transmissive region (456) for transmitting the light emitted from said light source (60) and passed through slits of said parallax barrier to the front and a reflective region (460) for reflecting the exterior light incident from the front to the front, and wherein said transmissive region and said reflective region are arranged in the second direction (333) in each pixel (one pixel in fig. 44), as discussed in col. 52, lines 20-53.

As to claim 5, Woodgate teaches an image display device according to claim 1, wherein each of said transmissive region 456 and said reflective region 460 is divided into a plurality of sub-regions (a red pixel 326, a green pixel 330, and a blue pixel 328) for color different from each other, and sub-regions for the same color are arranged along the first direction (332, col. 47, col. 24-31, and col. 52, lines 29-48).

As to claim 6, Woodgate teaches an image display device according to claim 4, wherein each of said transmissive region 456 and said reflective region 460 is divided into a plurality of sub-regions for color different from each other (a red pixel 326, a green pixel 330, and a blue pixel 328), and sub-regions for the same color are arranged along the first direction (332, col. 47, col. 24-31, and col. 52, lines 29-48).

As to claim 7, Woodgate teaches an image display device according to claim 1, wherein each of said transmissive region 456 and said reflective region 460 is divided into a plurality of sub-regions for color different from each other (a red pixel 326, a green pixel 330, and a blue pixel 328), and sub-regions for the same color are arranged along the second direction (333, col. 47, col. 24-31, and col. 52, lines 29-48).

As to claim 8, Woodgate teaches an image display device according to claim 4, wherein each of said transmissive region 456 and said reflective region 460 is divided into a plurality of sub-regions for color different from each other (a red pixel 326, a green pixel 330, and a blue pixel 328), and sub-regions for the same color are arranged along the second direction (333, col. 47, col. 24-31, and col. 52, lines 29-48).

As to claim 9, Woodgate teaches an image display device according to claim 5, wherein each of said at least one transmissive region 456 and said at least one reflective region 460 is divided into a red sub-region, green sub-region and blue sub-region (a red pixel 326, a green pixel 330, and a blue pixel 328, col. 47, col. 24-31, and col. 52, lines 29-48).

As to claim 10, Woodgate teaches an image display device according to claim 1, wherein said display panel is a liquid crystal display panel, col. 48, lines 1-3.

As to claim 11, Woodgate teaches an image display device according to claim 1, wherein said first direction is a horizontal direction of a display plane (the horizontal gap 333, fig. 44).

As to claim 12, Woodgate teaches an image display device according to claim 11, wherein said image for said first viewpoint is an image for the left eye 444 and said image for said second viewpoint is an image for the right eye 446 which has a parallax with respect to said image for the right eye to thereby provide a three-dimensional image, as described in col. 51, line 51 through col. 52, line 3.

As to claim 13, Woodgate teaches an image display device according to claim 1, wherein said first direction is a vertical direction of a display plane (the vertical gap 332, fig. 44).

As to claim 14, Woodgate teaches a portable terminal device including said image display device according to claim 1, laptop computer, as described in col. 1, lines 10-18.

As to claim 15, Woodgate teaches a portable terminal device according to claim 14, wherein said portable terminal device is any one of a cellular phone, portable terminal, PDA, game device, digital camera and digital video camera, as described in col. 1, lines 10-18.

5. **As to claim 16**, Woodgate teaches a display panel comprising a plurality of pixels (456, 460, fig. 44) in the form of a matrix, wherein each pixel includes a transmissive region (456) for transmitting light and a reflective region (460) for reflecting light, each of said transmissive region (456) and said reflective region (460) is divided into a red sub-region (326), green sub-region (330) and blue sub-region (328) and wherein the array direction (the array of gaps 332 and 33) of said transmissive region (456) and reflective region (460) is the same as that of said red sub-region (326), said green sub-region (330) and said blue sub-region (328) in each pixel, as described in col. 47, lines 24-31, and col. 52, lines 29-48.

As to claim 17, the image display device of claim 1, wherein an area of the transmissive region is equal to an area of the reflective region. (Woodgate discloses in col. 52, lines 54-60, and col. 53, lines 24-26.)

As to claim 18, the image display device of claim 4, wherein an area of the transmissive region is equal to an area of the reflective region. (Woodgate discloses in col. 52, lines 54-60, and col. 53, lines 24-26.)

As to claim 19, the image display device according to claim 1, wherein said transmissive regions in said pixel sections are arranged in a line in the first direction, and said reflective regions in said pixel sections are arranged in a line in the first direction, and each said line of said transmissive region and each said line of said reflective region alternates repeatedly in the second direction. (figure 44 of Woodgate discloses wherein said transmissive regions 456 in column

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pixel 332 in a line in the first direction, and said reflective regions 460 in the column pixel 332 in a line in the first direction, and each said column pixel 332 of said transmissive region and each said column pixel 332 of said reflective region alternates repeatedly in the second direction comprising column pixel 328 and column pixel 330, column 52, lines 40-48.).

As to claim 20, the image display device according to claim 4, wherein said transmissive regions in said pixel sections are arranged in a line in the first direction, and said reflective regions in said pixel sections are arranged in a line in the first direction, and each said line of said transmissive region and each said line of said reflective region alternates repeatedly in the second direction. (figure 44 of Woodgate discloses wherein said transmissive regions 456 in column pixel 332 in a line in the first direction, and said reflective regions 460 in the column pixel 332 in a line in the first direction, and each said column pixel 332 of said transmissive region and each said column pixel 332 of said reflective region alternates repeatedly in the second direction comprising column pixel 328 and column pixel 330, column 52, lines 40-48.).

Response to Arguments

Applicant's arguments filed on 9/6/2007 have been fully considered but they are not persuasive.

Claim 1 recited "An image display device comprising: a light source; a display panel disposed in front of said light source and having a plurality of pixel sections in the form of a matrix, each of said pixel sections including a first pixel for displaying an image for the first viewpoint and a second pixel for displaying an image for the second viewpoint, said second pixel being disposed at a position apart from said first pixel in (a) a first direction; and an optical unit disposed in front of said display panel for deflecting light emitted from said first and second

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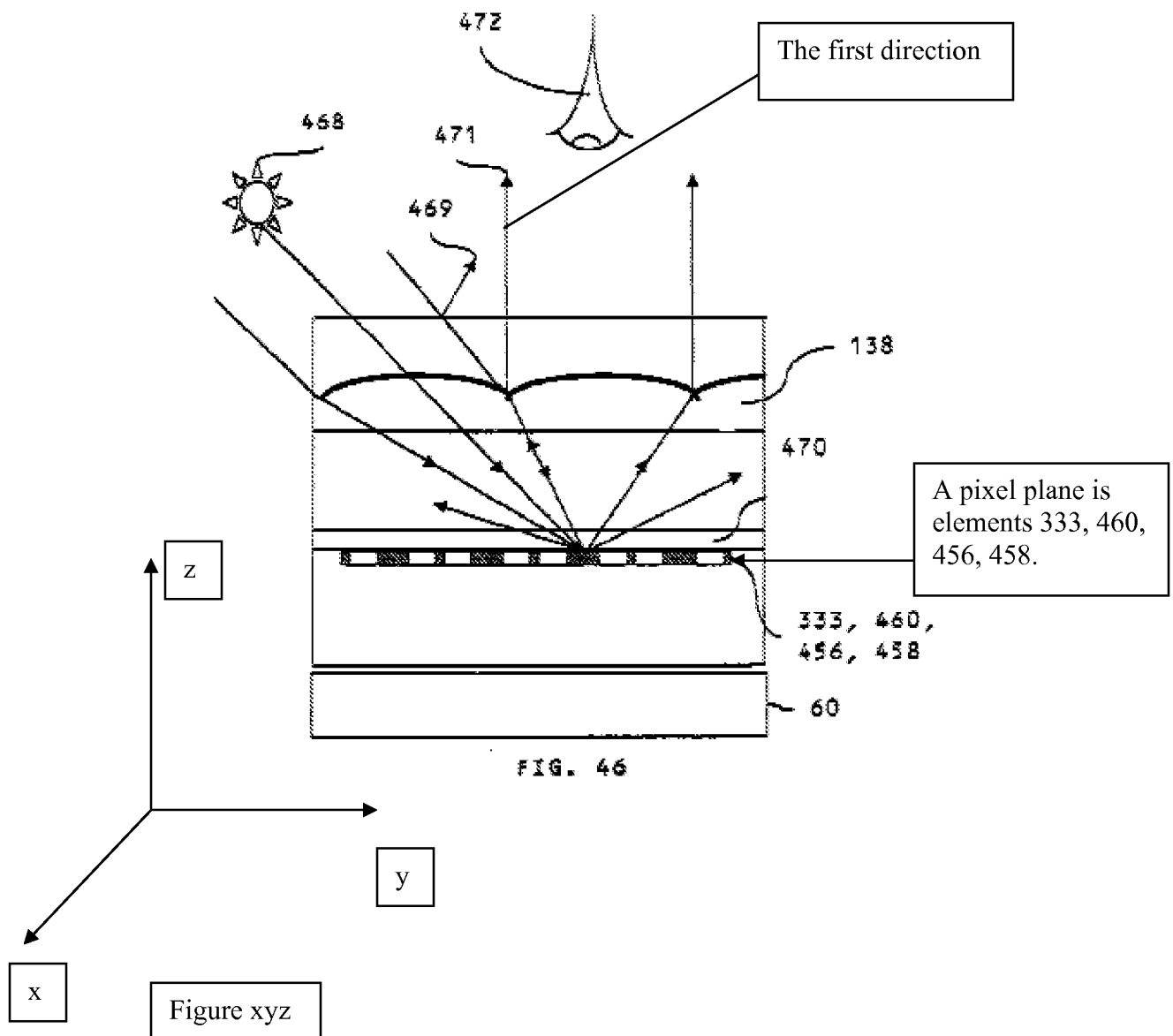
pixels in (b) the first direction, wherein each of said first and second pixels includes a transmissive region for transmitting the light emitted from said light source to said optical unit and a reflective region for reflecting the exterior light incident from the front to said optical unit, and wherein said transmissive region and said reflective region are arranged in (c) a second direction perpendicular to (b) the first direction in each pixel."

It is noted that the above-indicated limitations (a) (b) and (c) are not clear and confused. It is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, second paragraph. A first direction and the first direction are inconsistent. The first direction is lack of antecedent basis. Which one of a first direction or the first direction is perpendicular to a second direction?

In the ground of rejection of claim 1 above, the examiner should have clarified as following: In a top-sectional view of figure 44, and a cross-sectional view of figure 46, see the sketches on pages 11 and 13, Woodgate discloses a vertical gap 332 is parallel to column pixels 326, 328, 330 (as corresponding to a first direction as claimed). A horizontal gap 333 is parallel to the row pixels (alternate transmissive and reflective regions) 456, 460, 458 (as corresponding to the second direction as claimed). The horizontal gap 333 is parallel to two border lines of the transmissive and reflective regions 456, 460, 458. One skill in the art would recognize that the vertical gap 332, the horizontal gap 333, two border lines, the column pixels 326, 328, 330, and the row pixels 456, 460, 458 made up the pixel plane, which must be lying in the xy-plane. The vertical gap 332 is parallel to x-axis. The horizontal gap 333 is parallel to y-axis. X-axis is perpendicular to y-axis. Therefore, at least one column pixel 326 (a first direction) is perpendicular to at least one row pixel 456 (the second direction).

In the cross-sectional view of figure 46, Woodgate discloses the whole pixel plane as shown in figure 46 made up of one line, which contains elements 333, 460, 456, 458. It is noted that a line is made up of a plurality of pixels. These elements are supported in column 53, lines 13-15. Claim 1 requires "deflecting light emitted from said first and second pixels in (b)the first direction." The examiner should have clarified that the second paragraph of ground of rejection of claim 1 on page 3 as following: an optical unit (lens 138, fig. 46)deflecting light emitted from said first and second pixels in the first direction (e.g., the light beam 471, fig. 46). Claim 1 requires "said transmissive region and said reflective region are arranged in a second direction perpendicular to the first direction in each pixel." In the alternate embodiment, col. 40, lines 60-63, and col. 53, lines 45-50 of Woodgate further disclose the light beam 471 is maximum transmission that must orthogonal to the longitude direction of the lens 138 (as corresponding to the first direction as claimed). Therefore, the light beam 471 is perpendicular to the pixel plane (containing column pixels 332, 328, 330, and row pixels 456, 460, 458).

With respect to the applicant's argument of claim 1 on page 8, the applicant argues "Woodgate does not disclose that the emitted light is deflected in the direction in which the first and second pixels are disposed away from each other." These are not found to be persuasive. The examiner recognizes that the applicant admitted and indicated on page 8, line 3-4 in the remarks, "referring to Fig. 46 of Woodgate, the light from the lenticular lens is bending in the direction in which elements 456 and 460 are disposed away from each other." Furthermore, the element 456 is the transmissive region, which is made up of three sub-pixels 456. The element 460 is the reflective region, which is made up of three sub-pixels 460. Therefore, the transmissive region 456 and the reflective region 460 are disposed away from each other.



The applicant argues that claim 1 requires the emitted light be deflected in the first direction. These are not found to be persuasive. The reasons are as following: see the sketch above including three-dimensional coordinate system (x, y, and z) of figure 46. In the alternate embodiment, col. 40, lines 60-63, and col. 53, lines 45-50 of Woodgate further discloses a plurality of light beams are transmitted from the backlight 60, and are deflected by the lens 138.

At least one light beam 471 is maximum transmission, and must be orthogonal to the longitude direction of the lens 138. As the result, Woodgate discloses the light beam 471 corresponding to the first direction as recited in claim 1.

With respect to the applicant's argument of claim 4 on page 8, the limitation of claim 4 is the same as those of claim 1 and therefore the claim will be rejected using the same rationale.

The applicant argues that "in Woodgate there is no disclosure of how these pixels are arranged..." last paragraph, on page 8. These are not found to be persuasive. In the top-sectional view of figure 44, see a sketch on page 13, Woodgate discloses the column pixels 326, 328, 330 (as corresponding to a first direction as claimed), and the row pixels (alternate transmissive and reflective regions) 456, 460, 458 (as corresponding to the second direction as claimed). As the result, Woodgate discloses the pixels are arranged as following: the column pixels 326, 328, 330, and the row pixels (alternate transmissive and reflective regions) 456, 460, 458.

The applicant argues that "the direction is different from the repeated arrangement direction of pixels of claim 16 of the present invention" last paragraph, on page 8. These are not found to be persuasive. Figure 44 of Woodgate discloses the direction is same and repeats arrangement direction of column pixel 326, column pixel 328, and column pixel 330, and row pixel 456, row pixel 460, and row pixel 458, see sketch of Figure 44. As the result, Woodgate discloses ""the direction is NOT different from the repeated arrangement direction of pixels" as recited in claim 16.

The applicant argues that "...arranging transmissive regions in lines and arranging reflective region in line makes it possible to improve image quality" on page 10. These are not found to be persuasive. Woodgate's arrangement improves the high

brightness and contrast of the image being displayed, column 3, lines 45-60.

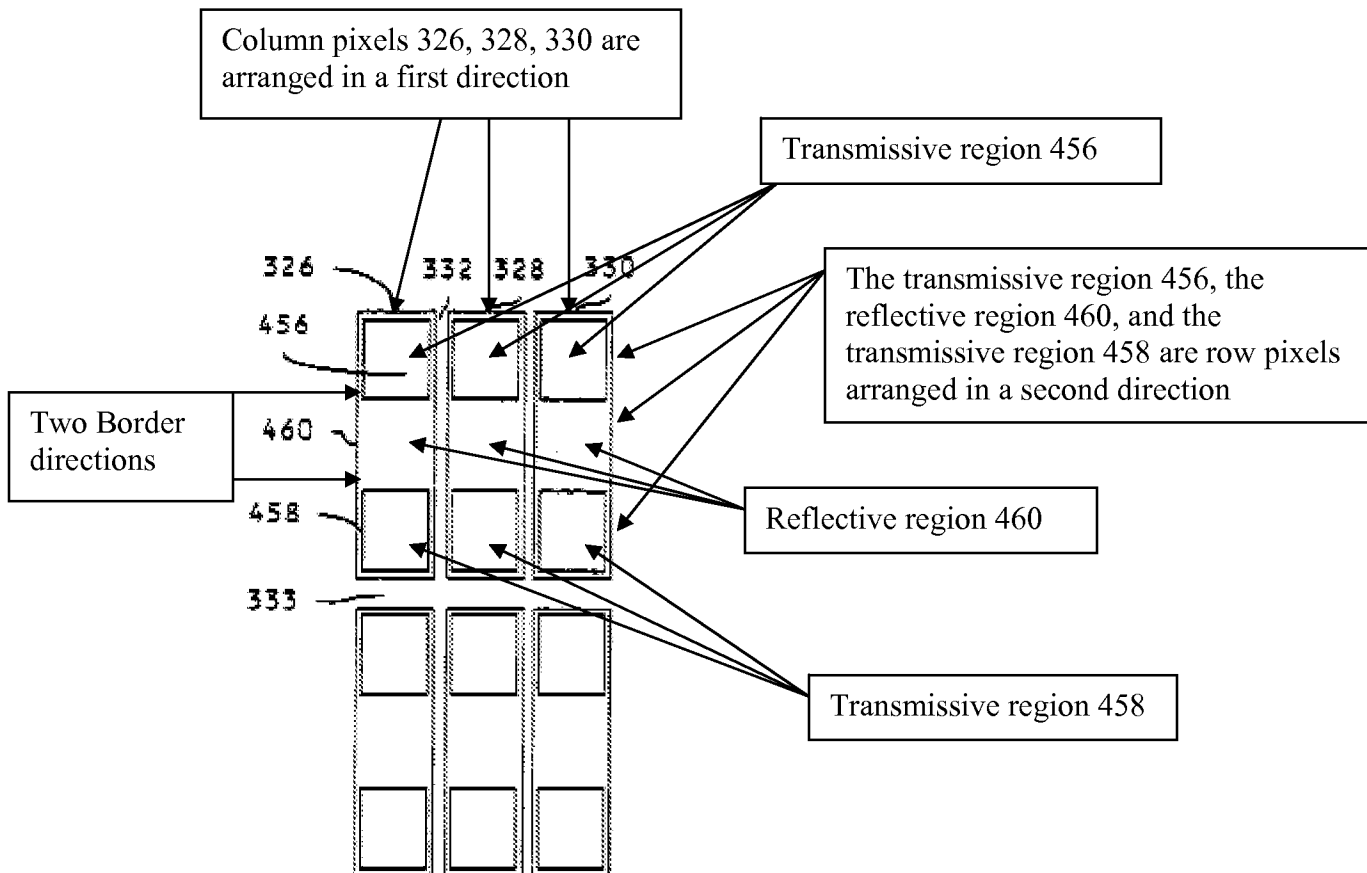


FIG. 44

With respect to the applicant's argument of claim 16 on page 9, the examiner should have clarified as following: In the top-sectional view of figure 44, Woodgate discloses the transmissive region is made up of three sub-pixels 456, and the reflective region is made up of three sub-pixels 460. Claim 16 requires, each pixel includes a transmissive and a reflective region. It is noted that a pixel is made up of three sub-pixels RGB. Therefore, each transmissive region 456 is made up of three sub-pixels RGB 456, an each reflective region 460 is made up of three sub-pixels RGB 460.

Applicant argues on page 9, Woodgate does not teach or suggest that each reflective region 460 and each transmissive region 458 is divided into a red sub-region, green sub-region, and blue sub-region. These are not found to be persuasive. Woodgate further discloses a column of red pixels 326, a column of blue pixels 328, and a column of green pixels 330. These elements are supported in column 52, lines 41-44. Furthermore, Woodgate further discloses a row pixel of transmissive region 456, a row of reflective region 460, and a row of transmissive region 458. Therefore, three columns of pixels 326, 328, 330 are intersected by three rows of pixels 456, 460, 458 that would be divided into a red sub-region, green sub-region and blue sub-region as required in claim 16. As the result, Woodgate teaches "each of said transmissive region and said reflective region is divided into a red sub-region, green sub-region and blue sub-region."

Applicant's arguments, see the pre-appeal brief, filed on 2/6/2008, have been fully considered but they are not persuasive.

With respect the applicant's argument to page 3, the examiner should have explained as following: In the alternate embodiment, column 50, lines 41-51 and figure 42 of Woodgate disclose the display device for multiple viewers including left eye (as corresponding to a first viewpoint as claimed), and right eye (as corresponding to a second viewpoint as claimed). In the alternate embodiment, Figure 44 of Woodgate further describes the details of the pixels arrangement in the disclosure of figure 42. Therefore, the embodiment of figure 42 and the embodiment of figure 44 are consistent.

With respect the applicant's argument on page 3, "Applicants submit that the claimed first and second directions are not just any directions. The direction in which a second pixel is disposed away from a first pixel is a first direction. Further, the direction in which a transmissive region and a reflective region of each of the pixels are arranged is a second direction, which is perpendicular to the first direction. Therefore, the features of claim 1 clearly define the first and second direction." These are not found to be persuasive. The examiner should have explained as following: the direction in which a second column pixel 328 is disposed away from a first column pixel 332 in a first direction of the column pixels 332, 328 and 330. Furthermore, the direction in which the transmissive region 456 and the reflective region 460 of each of the pixels is arranged in the direction of row pixel 456, row pixel 460, and row pixel 458, see the sketch of figure 44 above. Since the column pixels 332, 328 and 330 are orthogonal to the row pixels 456, 460 and 458; therefore, the first direction is perpendicular to the second direction as recited in claim 1.

With respect the applicant's argument to page 4, "The newly cited portion of Woodgate merely states that the deflector may provide horizontal deflection, while lenses provide diffusion in the vertical direction. See col. 54, lines 42-57 of Woodgate. However, this portion of Woodgate also does not anticipate the features of claim 1. Further, claim 1 is not anticipated by Woodgate for all the reasons previously of record." These are not found to be persuasive. The examiner notifies that Woodgate does anticipate the features of claims 19 and 20, but not anticipate for claim 1. In the alternate embodiment, Woodgate further discloses that features in figures 44 and 45,

column 52, lines 40-53.

The applicant argues with respect to claims 17 and 18 on pages 4 and 5. These are not found to be persuasive. The examiner finds that in the alternate embodiment, Woodgate further discloses in col. 52, lines 58-60, and col. 53, lines 24-26.

For these reasons, the rejection of claims 1-20 under Woodgate is maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN NGUYEN whose telephone number is (571)272-7697. The examiner can normally be reached on Monday-Thursday from 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571)272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KEVIN NGUYEN/
Primary Examiner, Art Unit 2629